

REMARKS

Claims 2-10 are pending. Claim 2 has been amended to incorporate the features of now canceled claim 1 and claims 3-4 have been amended to depend from claim 2. Claim 9 is also currently amended. Applicant thanks the Examiner for recognizing claims 6 and 8 contain allowable subject matter.

1. Claims 1-4, 5 and 7 were rejected as anticipated by Hori et al. (U.S. Patent No. 6,778,892).

Claim 2 has been amended to recite a headlamp apparatus for a vehicle that includes a control means for controlling light distribution to the headlamp based on a steering angle of a steering device. In addition, a straight steering position is detected by the control means based on an origin position signal output by the steering device when a difference between left and right wheel speeds is equal to or less than a predetermined value. Independent claim 5 recites similar features.

For example, FIG. 5 shows a flow chart of the operations carried out to set the optical axes of the headlamps 4L and 4R in a straight running direction of the car. In step S105, a difference between the wheel speeds SPDL and SPDR of front wheels 3LF and 3RF is calculated and compared to a reference value β . A difference equal to or smaller than the reference value β indicates the car is running in a substantially straight direction and the process proceeds to step S107 (page 11, lines 22-28). In step S107, when an origin position signal PZ (that indicates an origin position ZC) is input from a steering sensor 11 (page 12, lines 8-17), it is decided the car is in the straight steering position (step S109). The process then continues to step S111 in which the optical axes of the headlamps 4L and 4R are set to be in a straight running direction (page 12, line 32 – page 13, line 3).

The Horii et al. patent does not, however, disclose or suggest detecting a straight steering position based on an origin position signal when a “*difference* between a left and right wheel speed is *equal to or less* than a predetermined value.”

For example, the Horii et al. patent discloses an electronic control unit 20 that calculates a driver's viewpoint based on both a vehicle speed V detected by wheel sensors 18R, 18L and a steering angle θ_s detected by a steering angle sensor 16 (col. 2, lines 56-59). The electronic control unit 20 then controls swiveling actuators 12R, 12L according to a swivel angle θ_{sw} , in which the angle θ_{sw} is provided by a map that corresponds to detected vehicle speed V and steering angle θ_s (col. 2, lines 60-65). While the Horii et al. patent does disclose the vehicle speed V is determined by wheel sensors 18R, 18L, it does not suggest or disclose that this speed V is equal to a *difference* between the left and right wheel speeds. In fact, the Horii et al. patent fails to even mention that a difference in wheel speeds has any significance to the electronic control unit's functionality. Moreover, the Horii et al. patent does not disclose or suggest comparing any difference in wheel speeds to a predetermined value for the purpose of detecting a straight steering position.

At least for the foregoing reasons, independent claims 2 and 5 should be allowed.

Claims 3-4 and 7 depend from claims 2 and 5 and should be allowed for at least the same reason.

2. The dependent claims recite additional features that make these claims independently patentable. For example, claim 4 recites the control means corrects the straight steering position based on at least one of an integrating time in a steering angle position and an integrated running distance. In contrast, the Horii et al. patent only discloses that the swivel angle may be "corrected by *multiplying* the standard swivel angle θ_{sw} " (col. 3, lines 11-15; col. 3, lines 19-23) so that the illumination range of the swiveling lamp can cover the driver's viewpoint. The cited reference does not disclose or suggest that the straight steering position is corrected in any way or that such a correction is based on an integrated time in a steering angle position or an integrated running distance.

For these additional reasons, claim 4 should be allowable.

3. Claims 9 and 10 were rejected as anticipated by Horiuchi (U.S. Patent No. 6,688,760).

Claim 9 has been amended to recite the original position signal is obtained from a signal pulse detected for *each rotation* of a steering wheel. For example, the original position signal PZ discussed above is a pulse signal that is output from steering sensor 11 for *each rotation* of the steering wheel 12 (page 10, lines 8-10). The Horiuchi patent neither discloses nor suggests this feature.

The Horiuchi patent discloses a lamp body control system that includes wheel speed sensors 3, 4, steering sensor 2 and a control unit 6 for controlling the lamp body driving unit in accordance with the output values of the respective sensors (col. 4, lines 30-33). The Horiuchi patent does not disclose or suggest, however, an original position signal that is obtained from a signal pulse “detected for each rotation” of a steering wheel. Instead, the only signal obtained from steering angle sensor 2 in the Horiuchi patent is a steering angle signal. The steering angle signal is “a value obtained by counting pulse signals ...from the steering angle sensor 2 and indicates a value according to a *steering amount*” (col. 4, lines 42-44) but does not indicate an “*original position*” of the steering wheel for each rotation.

At least for the foregoing reason, claim 9 should be allowed.

Claim 10 depends from claim 9 and should be allowed for the same reason.

It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

Conclusion

In view of the above remarks, all remaining claims are allowable and a notice of allowance should be issued.

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Respectfully submitted,

Date: _____

2/27/2006

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